

Sub C1
85. (Amended) An assay for determining the presence or amount of a free and complexed cardiac specific isoform of troponin in a patient sample, said assay comprising:

performing an immunoassay with an antibody which specifically binds said free cardiac specific isoform of troponin, and which specifically binds said cardiac specific isoform of troponin in a complex comprising at least one other troponin component selected from the group consisting of troponin I, troponin C and troponin T; and

B1
detecting a signal from said immunoassay resulting from said antibody binding said free and complexed cardiac specific isoform of troponin, wherein said signal is at least a factor of two larger than a [minimum] signal resulting from said antibody binding to an equal number of (i) free troponin components which are not said cardiac specific isoform of troponin; [and/or] (ii) troponin complexes which do not comprise said cardiac specific isoform of troponin; or (iii) a combination of (i) and (ii), and wherein said signal is related to the presence or amount of said free and complexed cardiac specific isoform of troponin in said sample.

Sub C2
88. (Amended) An assay for determining the presence or amount of a free and complexed cardiac specific isoform of troponin in a patient sample, said assay comprising:

B2
performing an immunoassay with an antibody which specifically binds to free cardiac specific troponin I and/or cardiac specific troponin T, and which binds to cardiac specific troponin I and/or cardiac specific troponin T in a complex comprising at least one other troponin component selected from the group consisting of troponin I, troponin C and troponin T; and

detecting a signal from said immunoassay resulting from said antibody binding said free and complexed cardiac specific isoform of troponin, wherein said signal is at least a factor of two larger than a [minimum] signal resulting from said antibody binding to an equal number of (i) free troponin components which are not said cardiac specific isoform of troponin; [and/or] (ii) troponin complexes which do not comprise said cardiac

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~~specific isoform of troponin; or (iii) a combination of (i) and (ii), and wherein said signal is related to the presence or amount of said free and complexed cardiac specific isoform of troponin in said sample.~~

Sub C3
91. (Amended) An assay for determining the presence or amount of free and complexed cardiac specific troponin I in a patient sample, said assay comprising:

performing an immunoassay with an antibody which specifically binds to free cardiac specific troponin I, and which binds to cardiac specific troponin I in a complex comprising at least one other troponin component selected from the group consisting of troponin C and troponin T; and

B3
detecting a signal from said immunoassay resulting from said antibody binding said free and complexed cardiac specific troponin I, wherein said signal is at least a factor of two larger than a [minimum] signal resulting from said antibody binding to an equal number of (i) free troponin components which are not said cardiac specific troponin I; [and/or] (ii) troponin complexes which do not comprise said cardiac specific troponin I; or (iii) a combination of (i) and (ii), and wherein said detectable signal is related to the presence or amount of said free and complexed cardiac specific troponin I in said sample.

Sub C4
94. (Amended) An assay for determining the presence or amount of free and complexed cardiac specific troponin T in a patient sample, said assay comprising:

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performing an immunoassay with an antibody which specifically binds to free cardiac specific troponin T, and which binds to cardiac specific troponin T in a complex comprising at least one other troponin component selected from the group consisting of troponin I and troponin C; and

detecting a signal from said immunoassay resulting from said antibody binding said free and complexed cardiac specific troponin T, wherein said signal is at least a factor of two larger than a [minimum] signal resulting from said antibody binding to an equal number of (i) free troponin components which are not said cardiac specific troponin T; [and/or] (ii) troponin complexes which do not comprise said cardiac specific troponin

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T; or (iii) a combination of (i) and (ii), and wherein said signal is related to the presence or amount of said free and complexed cardiac specific troponin T in said sample.

Sub C57
102. (Amended) An assay for determining the presence or amount of all free and complexed cardiac specific isoform of troponin in a patient sample, said assay comprising:

B5
performing an immunoassay with an antibody which specifically binds [any] free cardiac specific [isoform of] troponin I, free cardiac specific troponin T, [and which specifically binds any] cardiac specific [isoform of] troponin I in a complex comprising at least one other troponin component selected from the group consisting of [troponin I,] troponin C and troponin T, and cardiac specific troponin T in a complex comprising at least one other troponin component selected from the group consisting of troponin I and troponin C; and

detecting a signal from said immunoassay resulting from said antibody binding said free and complexed cardiac specific isoforms of troponin, wherein said signal is related to the presence or amount of all free and complexed cardiac specific isoform of troponin in said sample.

Please add the following new claims:

134. (New) An assay according to claim 85, wherein said antibody is an antibody cocktail.

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135. (New) An assay according to claim 88, wherein said antibody is an antibody cocktail.

136. (New) An assay according to claim 91, wherein said antibody is an antibody cocktail.

137. (New) An assay according to claim 94, wherein said antibody is an antibody cocktail.

138. (New) An assay according to claim 102, wherein said antibody is an antibody cocktail.
139. (New) An assay according to claim 114, wherein said antibody is an antibody cocktail.
140. (New) An assay according to claim 119, wherein said antibody is an antibody cocktail.
141. (New) An assay according to claim 124, wherein said antibody is an antibody cocktail.
142. (New) An assay according to claim 129, wherein said antibody is an antibody cocktail.

IN THE SPECIFICATION

Please replace the abstract of the disclosure with the following:

-- Assays and antibodies are described for the detection and quantitation of cardiac specific troponin I and troponin T in patient samples. Since troponin I and T exist in various conformations in the blood, the ratios of the monomeric troponin I and T and the binary and ternary complexes may be related to the metabolic state of the heart. More specifically, immunoassays for determining the presence or amount of free and/or complexed cardiac specific troponin I and T are described. --

REMARKS

The present invention relates to the assay of free and complexed troponin isoforms in patient samples. Specifically, the invention discloses assay methods and kits that comprise antibodies specific for various cardiac troponin forms. Assays may use an antibody or antibody cocktail formulated to bind to all selected troponin forms. Alternatively, assays may be formulated with an antibody or antibody cocktail specific to one or more free and/or complexed troponin forms. The assay methods and kits of the